THE FARM AND HOME.

BEGIN NOW TO USE BUSINESS METHODS ON THE FARM.

The Only Way to Be Sure It Pays—Over Fatted Meat Is Unprofitable—Sheep Pointers and Household Hints.

Business Methods on the Farm.

With all the exhortations to farmers to make greater use of business methods on the farm, we see very few of them explaining how such methods should be applied, or wherein they would be specially valuable. Generalizing is not the best way to make truths plain. To come down to the root of the matter at once, let me ask the readers how he is to know whether his hogs, his poultry or his cows pay him a profit, if he feeds each class of these animals from the same grain bins? The cows may be making a profit on their feed, and thus concealing a deficit that comes from unprofitable hogs and hens. Or, the cows and hens may be concealing the fact that the hogs are running in debt to the farm. It is the same with other kinds of stock, when all are fed from a common quantity of feed stuffs. Occasionally it is even worse than the case mentioned, the cows, hens, and hogs might each and all return less than the cost of their keep, and still the truth be undiscovered, provided some other branch of farm operations brought in sufficient revenue to make up the deficiency. How can it be told, whether a certain crop of corn, oats, wheat or potatoes, has been a profitable one to raise, if no account is kept of the cost of preparing the ground, dressing, caring for, and harvesting the crop.

I would have separate grain bins for each kind of stock; then upon the first day of January of each year, or upon the first day of one of the spring months, if one chooses, a large blank book should be procured, and every time a sack of bran or oats is put into the poultry house, its cost should be charged to the account of the poultry. If ground meal, bone or any other article of food is purchased for the hens, let the cost be charged to them, and whenever eggs or market poultry are sold, let the proper credit be given, together with a credit for the eggs and poultry used on the table. If the hens have eaten a certain number of bushels of vegetables, their value should be charged to the poultry account. At the end of the year it will be pretty plain how the fowls have paid.

The dairy will have charged to it the feed that has been placed in the stable bins, together with the value of the hay, ensilage and roots eaten; and credit will be given to the same, for the butter sold and eaten, the milk sold or used, and the estimated value of the skim milk fed out. The dairy should also be credited for the value of calves, when weaned, and for the manure that is made.

It is not necessary to go farther into details, to show that this is the only way by which we can tell whether the work is profitable or not. This is the only way, if it is not profitable, by which one can tell what branch is handicapping all the rest. It needs no great knowledge of bookkeeping, to classify these important facts. Anyone with good common sense can make such debit and credit entries, under the heading of each branch of his farm operations, as he can himself readily understand, when he comes to reckon up the *cost* and the value of articles *sold and on hand*. The great point is to *begin* keeping such accounts, and the sooner one begins, the better. —Practical Farmer.

Is Soil Exhaustible?

The American agriculturist practically says no. This is how it arrives at this conclusion: "One foot in depth of a fairly good agricultural soil contains 4,000 pounds of phosphoric acid, 8,000 pounds of potash, 16,000 pounds of nitrogen and lime, magnesia, soda, chlorine, sulphur and silica to afford food for all the crops which these three elements can feed per acre. After farmers, by careful and skillful cultivation, have exhausted all this great store of plant feed in the uppermost foot of this soil, which will require several centuries, will the soil be exhausted? Not at all. As the land is gradually changed into vegetable growth and the surface is removed as farm crops, as it gradually deepens, the subsoil which contains the very same elements becomes fitted for plant food. And thus the imperishable nature of matter applies to the soil, which can never be exhausted during all the ages which are to come. All that mankind has to do is to use its arts, under the instruction of science, to develop this latent fertility of the soil, and to go on feeding the human race until the end, if an end ever shall come, when the earth will no longer exist as a fit habitation for mankind."

The Value of Corn Stalks.

At a recent meeting of farmers at Pikeville, in Maryland, Prof. H. Alvord, the director of the Maryland experiment station, read a most instructive paper on corn stalks. In the course of his remarks he took occasion to condemn the wasteful method of harvesting the corn crop so prevalent throughout the country, and which we have so frequently denounced. The stripping of the blades and cutting of the tops and then leaving the butts to rot in the field, practically amounts to wasting a large portion of the crop, besides being otherwise economically unsound, as the cost of this labor is out of all proportion to the value of the product saved. By analysis, the professor showed that two pounds of stalk butts contained as much nutriment as one pound of corn and cob meal, and that two and one-half pounds of stalks were equivalent as food to one pound of good corn meal. He further estimated that there is generally half a ton of butts left in the field after stripping the fodder and cutting the tops, which is equivalent to an absolute waste of 400 pounds of corn meal or six and one-half bushels of corn per acre.—Journal of Agriculture.

Over Fatted Meat Is Unprofitable.

Almost any sort of animal used for human food can, with greater profit both to the feeder and butcher, be made excessively fat than the sheep, though a superabundance of fat is not desirable, or sought after, by the average consumer of meat, whether it be beef, pork, veal or mutton; hence such goods are handled at a loss.

There is a medium line to be observed in preparing stock for the market that will insure better satisfaction to all parties concerned than the extremes of either over or under fatting, and while it is true the lean parts of very fat meat are always sweeter, more juicy and tender than when leanness predominates over the carcass, yet the proportion of this fine quality of meat is so small, compared with the aggregate weight of a very fat carcass, that butchers are shy except at low prices, knowing the large amount of unsaleable bulk it contains. Particularly is this true of mutton, and an excessively fat carcass of that class of meat answers more the purpose of showing the possibilities of the animal or breed to lay on fat, than any ends of profit reached, or satisfactory returns, to either the feeder, the butcher or consumer. A leading Birmingham butcher, who supplies meats to the weekly market, writes to an English paper, touching this matter, and says:

"Advise your readers to avoid sending heavy fat mutton to market, there is no sale, and it is a waste of time, food and labor to grow, and is of small value when slaughtered. It cannot compete with the lean Australian mutton now offered." What more advice than our correspondent has himself tendered is needed? His suggestion is well worth the consideration of breeders. There should not be much difficulty in adopting it. Upwards of a dozen different breeds of sheep should afford material enough for the production of lean mutton. Showyard attractions are not conducive of this result. Nor is the craze for early maturity. These objects are laudable in their way, but it behooves breeders to keep a close eye upon the demands of the age, in as far, at least as they concern their particular industry.—Coleman's Rural World.

Sheep Pointers.

Many have the mistaken notion that after shearing wool increases in weight. The opposite occurs. The more grease it contains the more it shrinks.

Strike for twins. Ewes which have good, sound udders, are docile and good mothers, and have produced twins, are the ewes to retain for breeders.

Merinos do not bear so many lambs as the coarser breeds, but they live and serve longer to compensate. Pampering the coarser breeds has probably impaired their constitutions.

Merino sheep do not contract scab one time in five as often as the coarse wools; in fact scab is a very rare thing in otherwise healthy Merino flocks. Their grease is antagonistic to the scab parasites.

Usually "show sheep" are not worth much for anything else, especially those of the old countries. Like some of the fair sex, they are pampered, petted, powdered, painted, spoiled. These "pa" will ruin anything.

Rules for Butter-Making.

The Royal Agricultural Society of England has published some excellent rules for butter-making, from which we make an extract, as they are also applicable in this country:

1. Rinse all dairy utensils in cold water.
2. Scald with hot water and rinse again with cold.
3. Always use a thermometer.
4. Churn the cream at a temperature of 58 degrees to 60 degrees in summer and 60 degrees to 62 degrees in winter.
5. Give the churn good ventilation, and churn at forty to forty-five revolutions to the minute.
6. Stop churning when the butter has formed in pellets the size of small shot.
7. Draw off the buttermilk, and pour pure water into the churn until it runs off clear and uncolored.
8. Make a strong brine and pour into the churn through a fine sieve.
9. Remove the butter and work it with a ladle or upon a butter-worker. Never use the hands. To these may be added the precaution to allow the butter to stand eight or ten hours, then work carefully to expel the excess of water and insure solidity, when it is ready for printing or the tub. If these directions are followed, streaks in the butter will never appear.

Hints for the Housewife.

Salt will curdle new milk.

To soften old putty, use a hot iron.

Varnish is "rough on bugs"—bed bugs especially.

You can clean mica, that has become smoked, with vinegar.

Mix baking soda with brick-dust for scouring your knives.

Raw beafsteak applied will remove the discoloration from bruises.

Cistern water may be purified by hanging a bag of charcoal in the water.

Laying tough meat in vinegar for a few minutes before cooking is said to make it more tender.

Sweet oil will remove finger-marks from varnished furniture, and kerosene from oiled furniture.

Equal parts of ammonia and turpentine will remove paint from clothing, if it is often enough applied.

A few drops of ether dropped into a bottle of oil will prevent it from becoming rancid for a long time.

To cut off glass bottles for cups, mark with a file where the line is wanted, and then run around the bottle with the point of a red-hot poker.

In preparing plaster of Paris for filling cracks in plaster, use vinegar instead of water in mixing it. The result will be a mass like putty, and it will not harden so soon.

Gilt frames may be freshened by dusting, and then washing them with one ounce of soda beaten up with the whites of three eggs. Scraped places may be touched up with gold paint.

SCIENCE AND PROGRESS.

VALUABLE INFORMATION FOR MANY READERS.

Amateur Astronomers—An Automatic Pitcher—Artificial Teeth for Horses—A Paper Hotel—Cast-Iron Railway Bridges.

Amateur Aatronomers.

The number of amateur astronomers is considerable, and it is safe to say that of all the sciences this is the one that can boast the most adepts among private persons. Among 1,160 astronomers now living, whose works have gained a footing in science, about half are amateurs with private observatories. In England, including official establishments and those attached to the universities, there are 34 observatories; in America, more than 80; in France, 17; in Austria, 24; in Italy, 21; in Russia, 15; and in Belgium, 5. We may say that an amateur, armed with a telescope, is to be found at every point on our planet, ready to observe a celestial phenomenon. In Chili, Honduras, Peru, New Zealand, Tunisia, and Tasmania we can meet astronomical amateurs provided with instruments, who devote their night hours to contemplating the beauties of the starry vault and to collecting observations which shall be useful for the advancement of science.

Most of the discoveries of comets, small planets, variable stars, and star-clusters are the fruit of individual researches. Were not all those amateur astronomers who, in the first ages of history, in Chaldea and Egypt, China and Mexico, drew from Nature the first explanations of celestial phenomena? From the beginning of historic time down to near our period, astronomical science has advanced only by the labors of philosophers, who pursued it as a matter of taste and not officially—The Popular Science Monthly.

An Automatic Pitcher.

An automatic machine has been designed in England for the use of cricketers, which it is proposed to utilize with some modifications for practice in base-ball batting. The new automaton is specially intended ro meet the wants of small cricket clubs whose finances will not admit of their employing a professional "coach." In this invention they find a bowler who never gets tired, is never off his play, never grows impatient with the young ideas, who will deliver balls at exactly the speed and pitch desired, and with the assistance of one small boy will bowl from morning until night. The machine is of simple construction. A cogged disk contains what may be called the "prime mover," in the shape of a powerful spring, and a slender steel rod carrying the ball is fixed thereto; a few turns of a handle wind up the spring in readiness, and a slight pressure on a shorter handle releases it and delivers the ball. By an ingenious arrangement the speed may be regulated and maintained with the greatest nicety, and the pitch of the ball can be determined beforehand and sustained with wonderful exactitude. The pace may be increased or reduced without altering the pitch, and the pitch may be adjusted nearer to or farther from the batsman without changing the pace. The disk is engraved with a register and carries a suitable pointer, to enable the manipulator to obtain the delivery desired and alter it when necessary. The ball rests upon a rigid steel loop, and is held in place by a leather cap, the steel ring on which is retained in place by an automatic catch, and the principle of the machine consists in releasing the ball from the delivery arm at a definite and predetermined point in its revolution. The direction is regulated by a large cross-handed screw in the base of the standard on which the device is fixed, and sights on the delivery rod enable the operator to lay the ball dead on any required spot, the machine remaining so trained until intentionally altered.

The Pasteur Institutes.

The Annales de l' Institut Pasteur have just been published, and contain complete statistics of inoculations for 1890. In that year 1,546 patients were treated at the institute. The foreign contingent in 1890 was about one-fifth of the total number, the majority coming from England, Belgium, Greece, and Portugal. However, the spread of the system, and the establishment of similar institutions in many of the large towns of Europe, will decrease the foreign element considerably. Varsovia, Odessa, Lisbon, Milan, Naples, Bucharest, and, in America, New York—all have Pasteur Institutes. The institute at Bucharest has distinguished itself by as striking a victory as that which heralded the Pasteur Institute in Paris. Nineteen Russians were bitten by a mad wolf, 1886; and although a fortnight elapsed between the accident and the treatment sixteen are alive and well to this day. The bite of a wolf is considered as far more dangerous than that of a dog, the mortality being 60 per cent.

From eleven to twelve of these Russians would therefore have perished but for inoculation. A similar occurrence has just taken place at Bukowina. A she-wolf attacked and bit no less than twenty-nine people, who were at once despatched to Bucharest. Three died but the rest returned cured to their homes. Out of the 1,546 patients treated in Paris in 1890, eleven after inoculation, giving a mortality of 71 per cent. Out of these six succumbed within a fortnight after inoculation, and five only after a longer period. Experiment proves, it is stated, that if the patient succumbs before a fortnight has elapsed after inoculation it is because the virus has affected the nervous centres, outstripping the antidote—that is the treatment was too late to be effective. This reduces the mortality to five out of 1,546 or 32 per cent.

The New Bullets.

There is quite a difference of opinion about the humanity of the new style of bullets for military purposes, which are claimed by the German surgeons to be the most humane missiles yet employed in war. The new projectile, which is made to to be fired from a rifle of small caliber, is long, so that its "weight of section," as it is termed by soldiers, is large, while its actual weight may be smaller than that of bullets of the old shape. By combining great weight of section with small diameter great velocity is given to the projectile, as well as such penetrating force that it will easily go through two or three men at the distance of a mile. M. Delahaye, who is calling into question the mercifulness of the new bullet, regards the new process of being drilled through by a bullet shaped like a lead pencil not much more humane than that of being shattered by an old-fashioned "slug," but the Germans say that the new projectile will not remain in the wound, but will make a straight perforation through the body, greatly simplifying the surgical treatment. There is no doubt that the camp undertaker will in future have more to do after a battle and the surgeon less than under the old regime, but as a soldier dreads long suffering from a wound as much as death the balance of "humanity" may after all be on the right side. As lead bullets of the modern shape would be likely to bend they are cased with steel or nickel tubes, which gives them the property of penetrating the hardest bone without deviating from their course.

An Automatic Telephone.

In addition to the ordinary public telephone in the post office of the Frankfort Electrical Exhibition, there has just been installed, for the convenience of visitors, by Messrs. Gould and Co., of Berlin, a new automatic telephone. The person wishing to make use of this instrument inserts the sum of 25 pfennige—threepence—, in two ten-pfennige pieces and one five-pfennige piece, in the inevitable slot, and presses a button in order to establish the connection with the office, which then effects the further connection with any desired subscriber in Frankfort and district. Should the required connection not happen to be at the moment available, the official in the telephone office in his turn presses a button, rendering it possible for the person at the automatic telephone to resecure possession of his 25 pfennige, which is certainly more than the ordinary run of automatic machines will perform if they fail to make due delivery of the desired sweetmeat, cigarette, or box of wax vestas.—Iron.

A Paper Hotel.

There seems to be practically no limitation to the uses to which paper can be and is applied. To the long list of articles intended for personal use, and in the smaller details of construction of rolling stock, such as wheels, axles, etc., there has been added a more extensive application to the needs of everyday life by the building of a hotel constructed of this material. This novel residence which has just been finished, and is situated in Hamburg, has been made entirely of paper boards which, it is said, are of the hardness of wood, but possess an advantage over the latter material in that they are fire proof, this desirable end being affected by impregnation with certain chemical solutions.

Artificial Teeth for Horses.

The inventive Yankee is now manufacturing false teeth for horses. A New York veterinary surgeon says that wonderful progress has been made in the art, and anything that can be done in human teeth can be done in horses' teeth. "I heard of a case a few days ago when this new invention was tried with perfect success. The horse's teeth were pulled out one by one, and in the cavities new teeth were inserted. They were literally cemented in; and, although the gums were sore for a week, they finally hardened, and now give the animal no pain. Filing horses' teeth and cleaning them are common things now, and in a few years the practice will be general."

Cast-Iron Railway Bridges.

Sir John Fowler's report to the directors of the London and Brighton Railway with reference to their bridges states that the company has 171 cast-iron bridges altogether, and that 81 of these ought within three years to be replaced with wrought-iron or steel structures. He does not state that any of them are unsafe, and concludes his report by saying "the result of my investigation does not indicate any unusual weakness in the Brighton bridges, which are neither better nor worse than those of similar lines of railways at home and abroad."

Lighting Mixture.

If a small quantity of chlorate of potash be powdered and mixed with an equal quantity of powdered sugar, a candle may be lighted by means of the mixture without matches. Place a little of it in the depression around the wick of a candle that has been previously used and then touch the mixture with a glass rod, the end of which has been dipped in oil of vitriol. It will burst into flame, lighting the candle.

SIGHTS IN DUBLIN CITY.

INTERESTING SKETCHES OF THE IRISH CAPITAL.

Kind Greetings to Courteous Strangers—Where Irish Statesmen May Meet Again—Phœnix Park's Tragic Spot.

How great is the difference in the characteristics of the Irish and the English people can only be fully realized by those who, having lived for some time in England, come across to sojourn for a few days upon this side of the narrow arm of the sea which divides the Celt from the Anglo-Saxon. A stranger might reside in London, for example, for months and even years and never make the acquaintance of his next door neighbor, but in the Irish capital a visitor, if he be only courteous and agreeable, may find himself quite at home in a few hours. As we sat at breakfast in our hotel, where the service was quite as good as could be obtained in even the most pretentitious of London's caravansaries, says a very interesting letter in the Chicago News, the jovial Irish gentleman opposite us, who has been visiting the horse show, opened a conversation by some casual remark about the weather, and learning that we had come over on a flying visit, launched off into an enthusiastic discussion of the merits of the horses.

We turned into the smoking room and were cordially greeted by an Irish commercial traveler, who opened the ball by observing: "Good morning, gentlemen. I hope we have at last got rid of the rain and the storms." After some further conversation our new acquaintance proceeded to give us details as to the passing events in the Irish capital, the places best worth seeing in the short time at our disposal, and proved himself to be a perfect walking encyclopedia upon everything connected with the past and present history of the city.

The moment we emerged from the hotel we were espied by a group of "jarvies," whose jaunting cars were in a line upon the cab rack opposite the edifice. Half a dozen rushed over, waving their whips and offering to drive us to all parts of the city and suburbs, and when we indicated our inclination to hire one of their vehicles there ensued a lively competition between the various jehus as to which of them would secure our custom. After a good deal of rather warm discussion we selected a well appointed carriage, drawn by a spirited young horse, which the owner assured us with much enthusiasm was the "fastest thing on four legs in Dublin."

Driving down Grafton street we meet bevies of charming Irish colleens with peach like complexions, pretty features and lovely eyes, all arrayed in their prettiest costumes. Strange to say, these bright eyed, rosy cheeked daughters of Erin dress with much better taste than their English sisters of the same station in life and display almost an artist's appreciation of the colors most suitable for their respective types of beauty, from the purest blondes to the most pronounced of brunettes.

Many of the old Dublin landmarks are fast disappearing under the destroying hand of time and the improving hand of the modern builder. Most of the old characters whom an American would expect to meet in an Irish city are also gone with a past generation. The familiar frieze coated individual of the stage, with his pipe in his hat, his knee breeches and his buckle shoes and shillelagh, has also gone and is not to be found outside of Connemara or the western islands.

Phœnix Park looks as gay as it did in the days when the young sparks of the capital in the olden time went there to settle their affairs of honor with pistol or rapier. Dueling died with the O'Gorman Mahon, the famous veteran of Clare, a contemporary of Daniel O'Connell, the liberator, who, after the tragic duel with D'Esterre, resolved never to fight another. The lately deceased member for Carlow on hearing this is said to have exclaimed: "I made no such resolution—God forbid."

The chief point of interest for modern tourists is the fatal spot where Lord Frederick Cavendish and Mr. Bourke were butchered by the "Invincibles" on the very eve of the former's official entry as chief secretary into Dublin. The spot is now simply marked by a small cross of rough white stones and the grass all about is tramped away by the thousands of footsteps of those who have visited the scene of the tragedy.

The Oldest Dwelling-House.

Kilian Van Rensselaer's house in Rensselaer county, opposite Albany, N. Y., is said to be the oldest inhabited dwelling-house in the United States. It stands near the Hudson river at the south end of Greenbrush, is of brick and has a gambrel roof. Two port holes out of which the early Van Rensselaers shot at Indians pierce the front walls, and a little plate in the rear, set up by the Albany Commemorative society, shows the edifice to have been erected in 1642. Behind this venerable mansion is a well on the coping of which "Yankee Doodle" is said to have been composed during the French war preceding the revolution. In the old hall the Dutch reformed settlers had religious services. There were no Buddensieks then.—Chicago Times.

A Limited Education.

"Little Waldo Beaconhill was in a predicament to-day. A lady gave him 'Robinson Crusoe,' in words of one syllable, and he couldn't read it. Poor child! He cried for twenty minutes."

"That's queer! Waldo can read."

"Yes—but only in words of eight syllables."—New York Sun.

ON [illegible]

A Voracious and Instructive Composition on the Subject.

An exchange recently printed the following composition on men which many women of experience will heartily approve: Men are peculiar; they wear number ten boots and snore. This is what makes it so easy to recognize a man when you see one. Men wear hats they are careful of, and carry umbrellas they are not careful of; when not losing them they are always poking them into somebody's eyes. Men don't gossip, but they talk over the news at their clubs. Men don't paint or powder (often), but they raise whiskers that make them look like Scotch terriers, and coax little hair moles to grow on their chins. Men are not vain, but they never like the young lady who says they are not handsome.

Men are consistent. They like to see the dress of a lady plain and simple, hate furbelows and flummery; but let a lady in plain clothes enter a car where these men are seated, and she may stand an hour and not one of them will offer her a seat; but when a lady enters arrayed in the height of fashion, every one of them will spring to his feet and glory in the honor of standing for her sake, or rather for the sake of her clothes. Men never find fault with themselves, not if they can help it. Adam showed them how they could help it, and they profited by his instruction. Men take cold and think they are going to die, and when you carry them a bowl of herb tea, they turn pale and ask if it is bitter, and if you don't suppose it would do just as well to take it next week.

Men don't lead around a poodle dog with a blue ribbon, but they chew tobacco and perfume their clothes with a pipe. Men are always wanting a shirt, and when they get one they are always ready to swear that there is not a button on it, when all the time the buttons will be there, only they don't find them. They pull off their boots and forget where they put them, and pretend they know all about it, and after they have rummaged around and turned everything upside down and looked on all the shelves in the pantry, in the sewing machine drawer, and upset your work basket, sit down and remark that this is a deuce of a house, a fellow never knows when he gets out of a thing when he is going to set eyes on it again; and when you bring his boots that you found right where he left them he hands you his slippers and asks if you can't "jab them in some out of the way corner where old scratch would never find them."

Rain.

Few people can form a definite idea of what is involved in the expression "An inch of rain." It may aid such to follow this curious calculation: An acre is equal to 6,272,640 square inches; an inch deep of water on this area will be as many cubic inches of water, which, at 227 to the gallon, is 22,000 gallons. This immense quantity of water will weigh 220,000 pounds, or 100 tons. One-hundreth of an inch (0.01) alone is equal to one ton of water to the acre.

The Victory of the Vanquished.

Granted the odds are against us; granted we enter the field,
When Fate has fought and conquered, broken our sword and shield.
What then? Shall we ask for quarter, or say that our work is done?
Say, rather, a greater glory is ours if the field be won!
'Tis war with the wrong of years—with prejudice, pride and hate;
Against the world's decree, and a frown of an evil fate.
A crown to the one who wins! and the worst is only a grave.
And somewhere somewhere still, a reward awaits the brave.
A broken shield without, but a hero's heart within,
And, held with a hand of steel a broken sword may win!

—Boston Transcript.

IN THE DOMAIN OF SCIENCE.

A careful examination of the aqueous humor of the eyes of cattle will determine whether they are suffering from tubercle or not. The bacilli will be found there in all cases where the disease exists.

A vast "banyan" tree covering between six and seven acres, has been discovered on the tiny Lord Howe island, 300 miles from Port Macquaire, in Australia. It is surpassed in size only by the greatest of those in India.

The new departure in photography, as recently applied to telescopes, has extended our information to a most wonderful degree already, especially in the delineation of the moon's surface and has opened a wide field for astronomers. Many points are clearly shown on the negative which can not be seen with the human eye even when using the powerful Lick telescope.

Imitation gold is a new compound which was recently discovered and which puzzles the best jewelers to detect. Its weight is that of old gold and the acid tests are the same, except that the acid boils a trifle when applied to it, although when it is wiped off no spot is left. It is cheap and is easily worked. Its chief factor is aluminum composite, from five to eight per cent.

A new scientific instrument has been gotten up by Prof. Bigelow, which is called the aurora inclinometer. By extensive researches he has found that the same law which underlies the working of electricity and magnetism is operating on the sun, and that sunlight is a magnetic field in which the magnetized earth rotates as does the armature of a dynamo. The instrument will be sent to Alaska, where it will be used in the study of the aurora, as it is there seen in the best conditions.

The geographical congress recently held in Switzerland recommended the universal adoption of the metric system and also the Greenwich meridian for the reckoning of longitude and time. It is doubtful if this will be done, however, by all nations, for, although a standard in both cases would be beneficial to the world at large, France naturally desires Paris time, and England would never surrender her prime meridian and adopt a revolution in her system of measurements unless the new measure was examined and based upon intrinsic merit.